

The desired release profile, which includes parameters such as the rate and duration of release, and the cumulative amount of substance released, may be determined, as described above, based on the characteristics of the substances chosen for the active component. Implementation of the desired release profile can be achieved by varying device design factors in consideration of the solubility *in situ* of the substances. By way of example only, if a therapeutic substance is highly water soluble, the release rate of the substance can be slowed down by converting the substance into a salt form with lower water solubility. Alternatively, the release rate of a highly water soluble substance may be slowed down by choosing a derivative or analog substance with a lower water solubility. The release rate of the substance can also be controlled by varying its solubility in the polymer coating. In general, the lower the solubility of the substance in a polymeric coating, the slower its release rate. Therefore, after an appropriate substance has been chosen, a polymeric coating can be selected in which the substance has the appropriate solubility. The release profile can also be adjusted, for example, by varying the number and thickness of polymer layers, with or without the active component. The interrelation and correlation of these and other design factors for achieving a desired release profile of the therapeutic substances are understood by one of ordinary skill in the art.

Example 1 on page 15 has been amended as follows:

1.5 grams of poly-(n-butyl methacrylate) and 0.5 gram of prednisolone can be dissolved in 100 ml of cyclohexanone and sprayed on a stent using standard small scale spray coating equipment like that available from EFD, Inc. East Providence, RI. The stent

can be dried at 75°C, under vacuum for 3 hours. Subsequently, the stent can be
overcoated, using the same method, with a solution of 0.6% benzalkonium heparin in
AMS Techspray (Tech Spray Inc. Amarillo, TX), and dried for 10 minutes at 75°C. The
resulting coated stent can have reduced thrombogenicity because of the heparin coating,
and can release the anti-inflammatory drug prednisolone for several days.

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Example 4 on Page 16 has been amended as follows:

1.5 grams of poly-(n-butyl methacrylate) and 0.5 gram of prednisolone can be
dissolved in 100 ml of cyclohexanone and sprayed on a stent using standard small scale
spray coating equipment like that available from EFD, Inc. East Providence, RI. The stent
can be dried at 75°C, under vacuum for 3 hours. Subsequently, the stent can be

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overcoated with parylene, and the parylene is functionalized with amine groups by
treatment with an ammonia plasma. The over coating and functionalization are standard
industrial processes. The amine groups can then be reacted with partially oxidized
heparin, binding the heparin to the surface of the parylene by Schiff's base formation,
forming a thromboresistant heparin coating.

Example 5 on page 16 has been amended as follows:

1.5 grams of poly-(n-butyl methacrylate) and 0.5 gram of prednisolone and 0.5
gram of acetyl salicylic acid can be dissolved in 100 ml of cyclohexanone/methanol
(50/50) and sprayed on a stent using standard small scale spray coating equipment like
that available from EFD, Inc. East Providence, RI. The stent can be dried at 75°C, under

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vacuum for 3 hours. The prednisolone can provide long term anti-inflammatory action,

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while aspirin can provide both short term anti-inflammatory action as well as thromboresistance due to its anti-platelet activity.

Example 7 on page 17 has been amended as follows:

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1.5 gram of poly-(n-butyl methacrylate) and 0.5 gram of prednisolone and 0.5 gram of benzalkonium heparin can be dissolved in 100 ml of cyclohexanone/Techspray (10/90) and sprayed on a stent using standard small scale spray coating equipment like that available from EFD, Inc. East Providence, RI. The stent can be dried at 75°C, under vacuum for 3 hours.

Example 8 on page 17 has been amended as follows:

1.5 gram of poly-(n-butyl methacrylate) and 0.5 gram of rapamycin are dissolved in 100 ml of cyclohexanone/methanol (50/50) and can be sprayed on a stent using standard small scale spray coating equipment like that available from EFD, Inc. East Providence, RI. The stent can be dried at 75°C, under vacuum for 3 hours. Subsequently,

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the stent can be overcoated, using the same method, with a solution of 0.6% benzalkonium heparin in AMS Techspray (Tech Spray Inc. Amarillo, TX), and dried for 10 minutes at 75°C. The resulting coated stent can have reduced thrombogenicity because of the heparin coating, and can release rapamycin for several days. Rapamycin, in addition to being a potent immune suppressor, also has anti-inflammatory activity.

Example 9 on page 17 has been amended as follows:

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1.5 grams of poly-(ethylene vinyl alcohol-co ethylene) (EVAL or EVOH) and 0.5 gram of prednisolone can be dissolved in 100 ml of dimethylsulfoxide (DMSO) and sprayed on a stent using standard small scale spray coating equipment like that available from EFD, Inc. East Providence, RI. The stent can be dried at 75°C, under vacuum for 12 hours. Subsequently, the stent can be overcoated, using the same method, with a solution of 0.6% benzalkonium heparin in AMS Techspray (Tech Spray Inc. Amarillo, TX), and dried for 10 minutes at 75°C. The resulting coated stent can have reduced thrombogenicity because of the heparin coating, and can release the anti-inflammatory drug prednisolone for several days.

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Example 10 on page 18 has been amended as follows:

1.5 gram of poly-(n-butyl methacrylate) and 0.5 gram of prednisolone can be dissolved in 100 ml of cyclohexanone and sprayed on a stent using standard small scale spray coating equipment like that available from EFD, Inc. East Providence, RI. The stent can be dried at 75°C, under vacuum for 3 hours. Subsequently, the system is overcoated with a thin layer of PTFE, using a commercially available method (such as that described by Advanced Surface Engineering, Inc, Eldersburg, MD). The low surface energy of the teflon coating can prevent protein deposition, and subsequent thrombus accumulation, while the prednisolone can provide the anti-inflammatory component.